

CLAIMS

1. An aluminum alloy hollow material characterized
in that the material is manufactured by subjecting an
5 aluminum alloy ingot containing at least 0.3~1.5 wt% Mn to
port hole extrusion or to port hole extrusion followed by
drawing-elongation processing, wherein a difference in
electric conductivity of individual portions in lengthwise
direction of the hollow material is not more than 1.0
10 IACS%.

2. A process for producing an aluminum alloy hollow
material as set forth in claim 1, wherein an aluminum
alloy ingot containing at least 0.3~1.5 wt% Mn is
15 subjected to a homogenizing treatment and thereafter the
ingot is subjected to port hole extrusion or port hole
extrusion followed by drawing-elongation processing to
produce a hollow material, in which the aforesaid
homogenizing treatment is carried out by maintaining the
20 ingot at a given temperature of 500~630 °C for 0~24 hours,
thereafter cooling the ingot down to 400~500 °C at a
cooling velocity of not more than 100 °C/hr, and
maintaining the ingot at this temperature for 4~48 hours.

25 3. A process for producing an aluminum alloy hollow

material as set forth in claim 1, wherein an aluminum alloy ingot containing at least 0.3~1.5 wt% Mn is subjected to a homogenizing treatment and thereafter the ingot is subjected to port hole extrusion or port hole
5 extrusion followed by drawing-elongation processing to produce a hollow material, in which the aforesaid homogenizing treatment of the ingot is carried out by maintaining the ingot at a given temperature (T_1) of 500~630 °C for 0~16 hrs, thereafter cooling the ingot from
10 the temperature T_1 to 350 °C (T_2) at a cooling velocity of not more than 100°C/hr, whereby the time from after achieving to the temperature T_1 to becoming the temperature T_2 is maintained within 10~48 hrs, and cooling the ingot at an optional cooling velocity from the
15 temperature T_2 to room temperature.

4. A process for producing an aluminum alloy hollow material as set forth in claim 1, wherein an aluminum alloy ingot containing at least 0.3~1.5 wt% Mn is
20 subjected to a homogenizing treatment and thereafter the ingot is subjected to port hole extrusion or port hole extrusion followed by drawing-elongation processing to produce a hollow material, in which the aforesaid homogenizing treatment is carried out by maintaining the
25 ingot at a given temperature of 400~500 °C for 12~48 hours,

and thereafter cooling the ingot down to room temperature.

5. A process for producing an aluminum alloy hollow material as set forth in claim 1, wherein an aluminum alloy ingot containing at least 0.3~1.5 wt% Mn is subjected to a homogenizing treatment and thereafter the ingot is subjected to port hole extrusion or port hole extrusion followed by drawing-elongation processing to produce a hollow material, in which the aforesaid homogenizing treatment of the ingot is carried out by maintaining the ingot at a given temperature of 400~500 °C for 0.5~4 hours, thereafter elevating the temperature up to an another given temperature of 550~630 °C, maintaining the temperature for 0.5~4 hrs., thereafter cooling the ingot to 350 °C at a cooling velocity of not more than 100 °C/hr, and cooling the ingot from 350 °C to room temperature at an optional cooling rate.

6. An aluminum alloy extruded pipe material for air conditioner piping characterized in that an aluminum alloy ingot consisting of 0.8~1.5 wt% Mn, 0.1~0.7 wt% Fe, 0.03~0.6 wt% Si, and 1 or at least 2 of 0.00~0.45 wt% Cu, 0.0~0.3 wt% Mg, 0.0~0.3 wt% Cr, 0.0~0.1 wt% Ti, 0.0~0.5 wt% Zn, 0.0~0.3 wt% Zr, and 0.0~0.3 wt% Ni, the balance being aluminum, and any unavoidable impurities is

subjected to port hole type continuous hot extrusion,
wherein an electric conductivity of the aforesaid pipe
material is at least 39.0 IACS% and a difference in
electric conductivity of individual portions in lengthwise
5 direction of the extruded pipe material is not more than
1.0 IACS%.

7. A process for producing an aluminum alloy
extruded pipe material for air conditioner piping wherein
10 an aluminum alloy ingot consisting of 0.8~1.5 wt% Mn,
0.1~0.7 wt% Fe, 0.03~0.6 wt% Si, and 1 or at least 2 of
0.00~0.45 wt% Cu, 0.0~0.3 wt% Mg, 0.0~0.3 wt% Cr, 0.0~0.1
wt% Ti, 0.0~0.5 wt% Zn, 0.0~0.3 wt% Zr, and 0.0~0.3 wt% Ni,
the balance being aluminum, and any unavoidable impurities
15 is subjected to a homogenizing treatment and thereafter
the ingot is subjected to port hole type continuous hot
extrusion method to extrude a pipe material, in which the
aforesaid homogenizing treatment of the ingot is carried
out by maintaining the ingot at a given temperature of
20 500~630 °C for 0~24 hrs, thereafter cooling the ingot down
to an another given temperature of 400~500 °C at a cooling
velocity of not more than 100 °C/hr, and maintaining the
ingot at this temperature for 4~48 hrs.

25 8. A process for producing an aluminum alloy

extruded pipe material for air conditioner piping wherein
an aluminum alloy ingot consisting of 0.8-1.5 wt% Mn,
0.1-0.7 wt% Fe, 0.03-0.6 wt% Si, and 1 or at least 2 of
0.00-0.45 wt% Cu, 0.0-0.3 wt% Mg, 0.0-0.3 wt% Cr, 0.0-0.1
5 wt% Ti, 0.0-0.5 wt% Zn, 0.0-0.3 wt% Zr, and 0.0-0.3 wt% Ni,
the balance being aluminum, and any unavoidable impurities
is subjected to a homogenizing treatment and the ingot is
subjected to port hole type continuous hot extrusion
method to extrude a pipe material, in which the aforesaid
10 homogenizing treatment of the ingot is carried out by
maintaining the ingot at a given temperature (T_1) of
500-630 °C for 0-48 hrs, thereafter cooling the ingot from
the temperature T_1 to 350 °C (T_2) at a cooling velocity of
not more than 100 °C/hr, whereby the time from after
15 achieving the temperature T_1 to becoming the temperature T_2
is maintained within 12-48 hours, and cooling the ingot at
an optional cooling velocity from the temperature T_2 to
room temperature.

20 9. A process for producing an aluminum alloy
extruded pipe material for air conditioner piping wherein
an aluminum alloy ingot consisting of 0.8-1.5 wt% Mn,
0.1-0.7 wt% Fe, 0.03-0.6 wt% Si, and 1 or at least 2 of
0.00-0.45 wt% Cu, 0.0-0.3 wt% Mg, 0.0-0.3 wt% Cr, 0.0-0.1
25 wt% Ti, 0.0-0.5 wt% Zn, 0.0-0.3 wt% Zr, and 0.0-0.3 wt% Ni,

the balance being aluminum, and any unavoidable impurities is subjected to a homogenizing treatment and the ingot is subjected to port hole type continuous hot extrusion method to extrude a pipe material, in which the aforesaid
5 homogenizing treatment of the ingot is carried out by maintaining the ingot at a given temperature of 400-500 °C for 12-48 hrs, and thereafter cooling the ingot down to room temperature.

10 10. A process for producing an aluminum alloy extruded pipe material for air conditioner piping wherein an aluminum alloy ingot consisting of 0.8-1.5 wt% Mn, 0.1-0.7 wt% Fe, 0.03-0.6 wt% Si, and 1 or at least 2 of
15 0.00-0.45 wt% Cu, 0.0-0.3 wt% Mg, 0.0-0.3 wt% Cr, 0.0-0.1 wt% Ti, 0.0-0.5 wt% Zn, 0.0-0.3 wt% Zr, and 0.0-0.3 wt% Ni, the balance being aluminum, and any unavoidable impurities is subjected to a homogenizing treatment and the ingot is subjected to port hole type continuous hot extrusion
20 method to extrude a pipe material, in which the aforesaid homogenizing treatment of the ingot is carried out by maintaining the ingot at a given temperature of 400-500 °C for 0.5-4 hours, thereafter elevating the temperature up to an another given temperature of 550-630 °C, maintaining the temperature for 0.5-4 hrs., thereafter cooling the
25 ingot to 350 °C at a cooling velocity of not more than 100

°C/hr, and cooling the ingot from 350 °C to room temperature at an optional cooling velocity.